

SOME NEW CHRYSIDID WASPS FROM WESTERN UNITED STATES.

BY S. A. ROHWER, BOULDER, COLO.

Hedychridium polygona n. sp.

Female: length 6.5 mm. Head about the same width and length as the prothorax, rather transverse; closely punctured and appearing granular. Anterior margin of the clypeus straight; the middle raised into a low rounded carina. The basal part of the mandibles punctured; malar space very narrow; cheeks narrow; orbital carina wanting;¹ eyes converging below; eyes oval. Facial basin strongly transversely striated; in the middle there is a shallow longitudinal furrow. Third antennal joint distinctly longer than the fourth. Pronotum, mesonotum and scutellum punctured as the head; parapsidal furrows only faintly indicated, straight and parallel. Tegulae black, polished, impunctate. Postscutellum with large punctures, or more properly strongly reticulate; from the postscutellum there is a distinct carina running to the base of the abdomen; fovea of the metanotum irregularly striated; teeth of the metathorax sharp. Claws with a rather large inner tooth. Basal middle of the first abdominal segment with a narrow impression in addition to the usual broad depression; the middle of the first abdominal segment and the basal three-fourths of the second finely and rather sparsely punctured; sides of the first, and to some extent the sides of the second, the apical third of the second and all the third with larger, closer and somewhat confluent punctures. Posterior margin of the third segment evenly rounded, not notched. Color very dark blue, almost purple, without any green reflections; antennae beyond the scape, legs beyond the tibiae and the tegulae black or brownish. The entire insect covered rather sparsely with short black hair; tarsi with gray pubescence. Wings dusky, the apical third darker; venation brown or black.

Type locality: Boulder, Colo., Sept. 1, 1908, at flowers of *Polygonum* (S. A. Rohwer).

The ridge connecting the postscutellum and the metanotum, and the striated fovea, will make this species fall next to *H. caeruleum* Norton (Dak. and Mont.). It differs from Norton's description of *caeruleum* as follows: facial basin striated, tegulae black, and the color is entirely dark blue. In the same locality and on the same day

¹ The term "orbital carina" is used to denote the carina on the cheeks from the mandibles toward the top of the eye on the posterior margin of the head.

I collected specimens of *II. viride* Cresson. *II. polygona* may be known from *II. viride* by the darker wings, the darker color, the strongly striated facial basin, and the presence of the carina from the postscutellum.

Chrysis (Tetrachrysis) **cærulans nanula** n. subsp.

Female: length 5 mm. Facial carina¹ distinct; malar space broad; clypeus transverse; radial cell almost closed at the apex. Apical teeth short, broadly triangular, obtuse at the apex, the emargination between the middle ones sub-V-shaped and narrower than the emargination between the middle and lateral ones. Lower lateral margin of the third segment straight. Apical groove distinct, with eight pits, the middle pits somewhat confluent. Blue; tarsi and the flagellum brownish. Wings slightly dusky, venation black. Sparsely clothed with a few long hairs.

Easily separated from *cærulans* by the short obtuse teeth.

Type locality: Florissant, Colo., June 24, 1908, (T. D. A. Cockerell).

Chrysis (Tetrachrysis) **florissanticola** n. sp.

Male: length 7.5 mm. Clypeus transverse; facial carina wanting; facial basin punctured above, finely transversely striated below; a faint longitudinal furrow above; malar space less than the length of the second antennal joint; facial quadrangle narrowest a little below the top of the facial basin; cheeks very narrow at the mandibles; eyes rather large oval; the third antennal joint about one third longer than the fourth. Pronotum longer than the head, its apical middle dentate, very little if any shorter than the mesonotum; parapsidial furrows distinct, parallel; outside of these are two short rather indistinct ones; punctures of the head and thorax dense, those of the thorax larger than those of the head. Radial cell open at the apex. Abdomen shining, the punctures of the first two segments about the same size as those of the head, not confluent, the punctures of the second segment a little more separated than those of the first segment; the third segment has the punctures confluent. Pits rather small, distinct, more or less oval in outline, about fourteen in number. Lower lateral margin of the third segment is slightly bisinuate; teeth short, broad, obtusely triangular. Color bright green, with a very few purple reflections; antennæ beyond the second segment black; tarsi brownish; tibial spurs yellowish. Facial basin with long, dense, white hair; head, thorax, legs and the abdomen (the hair of the abdomen is short) with long rather dense gray or whitish hair. Wings hyaline, beyond the stigma the radial cell is slightly cloudy, venation dark brown.

¹ The facial carina is the transverse carina above the facial basin.

Type locality: Florissant, Colo., June 23, 1907 (S. A. Rohwer).

This species was sent to M. R. du Buysson who returned it labeled "n. sp.," and suggested I describe it. In Aaron's paper on North American Chrysidæ (Tran. Am. Ent. Soc. XXI, 1885, p. 233) this species runs to *lauta* Cresson, but the apical teeth are shorter and more obtuse than in that species, the facial quadrangle is different, and it is much more pubescent. The dense hair of the facial basin reminds one of *snowi* Viereck, but that species has a shorter prothorax. It differs from *tripartita* Aaron by the hyaline wings.

Chrysis (*Tetrachrysis*) **nokomis** n. sp.

Male: length 8 mm. Clypeus transverse; facial carina distinct and strong, bent in the middle; facial basin granular; malar space distinct, broad, about as long as the third antennal joint; third antennal joint very little longer than the fourth; orbital carina well defined; facial quadrangle very little narrower below. Head and thorax (the metathorax more coarsely so) punctato-granular. Pronotum shorter than the head; parapsidial furrows parallel; mesopleuræ with a distinct, slightly oblique, somewhat foveolated furrow, the lower part of this furrow changes into a carina. The radial cell is almost closed at the apex. The spines of the metathorax are large. The first two dorsal abdominal segments with distinct, rather large, separated punctures, the spaces between the punctures smooth; the third segment coarsely granular; the apical furrow not very deep; pits about six in number, most of them confluent; lower lateral margin of the third segment arched inwardly at about the middle. The teeth long, apices rounded, the sides subparallel; the middle teeth much closer together than the middle and the outer ones, the area between them angulate; the area between the middle and the lateral teeth semicircular. The upper figure of fig. 76, pl. X, Tr. Am. Ent. Soc. XII is much like the teeth of *nokomis*. Color dark purple with some green reflections; flagellum and tarsi black or brownish. The entire insect clothed with long shaggy, gray hair. Wings hyaline, venation black.

Female: The female differs from the male in having the third segment humped before the furrow; the apical teeth broader, triangular and bearing the same relation to the male as the female of *propria* does to the male according to Aaron's figure; the hair is not as dense as in the male; the wings are slightly dusky; and the radial cell is a little more open at the apex.

Type locality: The male, Denver, Colo.; the female Las Vegas, N. M. (T. D. A. Cockerell).

This species is superficially like *nortoni* Aaron, but the teeth are very different,

being longer and the middle ones much closer together. Its nearest ally is perhaps *montana* Aaron, but it differs from that species in the more coarsely sculptured facial basin, the much broader malar space, and the apical teeth are not so strongly curved. The teeth are much like those of *propria* Aaron, but the facial basin is not striated, and the pronotum is not as long as the head.

Chrysis (*Tetraechrysis*) **decepta** n. sp.

Female: length 6.5 mm. Clypeus transverse; malar space almost as long as the length of the third antennal joint; facial basin as coarsely sculptured as the rest of the head except in the middle where it is shining; facial carina wavy and not very strong; the orbital carina not well defined; the third antennal joint almost as long as the length of joints four plus five. Pronotum almost as long as the head; no distinct furrow on the mesopleuræ; parapsidial furrows parallel; the upper of the U-shaped furrow of the metathorax finely transversely striated, the lower part hidden by the abdomen; hind basitarsus a little longer than the length of joints 2, 3, 4; radial cell completely closed at the apex. Head and tho ax very closely punctured. Abdomen a little longer than the head and thorax; the punctures more separated than those on the thorax, the spaces between them smooth and shining; the third segment more closely punctured. The lower lateral margin of the third segment bisinuate, more strongly so about the middle and gently so just before the apical teeth; above the third segment is depressed about the middle. The lateral teeth not so strongly curved downward as middle ones; the teeth sharp, triangular; the emargination between the middle ones deeper and broader than the emargination between the middle and lateral ones; all the emarginations evenly semicircular. The apical furrow rather deep, with ten deep pits. Color dark blue with a few green reflections; antennæ beyond the third joint and the tarsi black. The entire insect with short gray hair. Wings hyaline, iridescent; venation black.

Type locality: Boulder, Colo., June 13 (G. M. Hite).

This species was determined for me as *montana* Aaron by M. R. du Buysson, but it does not agree with Aarons account of this species, and may be separated from it by the distinct malar space (the malar space of *montana* is very narrow, almost wanting); the middle teeth are much farther apart and the emargination between them is semicircular, not subtriangular. It is much like *frey-gessneri* Gribodo, but the apical pits are distinct and the facial basin is not striated or smooth.

Chrysis (*Tetrachrysis*) **amala**¹ n. sp.

Female: length 5 to 5.5 mm. Clypeus transverse; the malar space about the same length as the pedicellum; facial basin punctured like the rest of the head, except in the middle where there is a finely transversely striated area; the facial carina straight, evident; the third antennal joint as long as the length of joints four plus five; orbital carina not very strong. Pronotum shorter than the head; parapsidial furrows distinct, parallel; the furrow on the mesopleuræ faint; the U-shaped furrow of the posterior face shining above; hind basitarsus as long as joints 2, 3 and 4; radial cell open at the apex; the head and thorax closely rather coarsely punctured. Abdomen not so closely punctured as the head and thorax; the third segment not more coarsely sculptured than the second; the spaces between the punctures smooth, shining. The lower lateral margin of the third segment bisinuate; the upper surface straight. The middle teeth more strongly curved downward than the outer ones; the emargination between the middle teeth deeper and wider than the emargination between the middle and lateral teeth; the emargination between the teeth semicircular; the teeth sharp triangular. The apical furrow rather deep, with eight to ten distinct pits. Blue with some greenish reflections; the antennæ beyond the third joint and the tarsi brownish-black; the entire insect clothed with erect gray hair. Wings hyaline, iridescent; venation brownish.

Type locality: Florissant, Colo. The type collected June 19, 1908, by T. D. A. Cockerell; two paratypes collected June 12, 1908, by S. A. Rohwer, on sand.

Very much like *decepta* Roh., but it is smaller, the facial carina is straight, not wavy, and the radial cell is open at the apex.

Chrysis (*Tetrachrysis*) **submontana** n. sp.

Length 6 mm. Clypeus transverse, the upper surface rather finely punctured; malar space linear, not as long as the short pedicellum; facial basin in the central part finely transversely striated; facial carina wanting; orbital carina very faint; ocelli in a triangle, the anterior ocellus not hooded. Pronotum not quite as long as the head; parapsidial furrows parallel; the furrow on the mesopleuræ evident but not strong; the U-shaped furrow of the posterior face of the metathorax foveolated above, below with two large fossæ; the teeth of the metathorax rather flattened, acute; head and thorax rather coarsely, closely punctured; hind basitarsus as long as joints 2, 3 and 4; radial cell open at the apex. Abdomen very closely, finely punctured, appearing granular; the first segment is more distinctly punctured than the following

¹ Amala is a Malayan word for blue.

segments. The lower lateral margin of the third segment bisinuate; the dorsal surface evenly rounded to the furrow. The apical teeth rather obtuse, short, broadly triangular; the emargination between the middle ones triangular and narrower than the emargination between the middle ones and the lateral ones, which is semicircular. Apical furrow distinct, the pits somewhat confluent, about eight in number. Blue with some green reflections; the antennæ beyond the fourth joint and the tarsi brownish-black. The insect is almost nude. Wings slightly dusky, brownish; venation black.

Type locality: Rifle, Colo. Two specimens collected July 2, 1908 (S. A. Rohwer).

This species is closest to *montana* Aaron, but the apical teeth are short, obtusely triangular, and the anterior ocellus is not hooded.

Many thanks are due to Prof. T. D. A. Cockerell for going over my manuscript.

THE ENVIRONMENT OF *CALLICISTA INES*, EDWARDS (DYAR), IN SOUTHERN CALIFORNIA.

BY FORDYCE GRINNELL, JR., PASADENA, CAL.

THIS pretty and delicate little Hair-streak was first described by W. H. Edwards in *Papilio*, II, 25, 1882, from a large number of specimens taken in Southern Arizona in October, 1881, by Jacob Doll. W. G. Wright in his "Butterflies of the West Coast" records it from the Santa Rita mountains, Arizona and Southern California in October; but he does not specify in what part of Southern California he took it. Mr. W. S. Wright in the *Journal of the New York Entomological Society*, XVI, Sept., 1908, p. 162, gives an interesting but short account of the butterfly. It was taken by Mr. G. H. Field in July at Jacumba, San Diego County, where he found it rather common. This is the first definite record for the state. He supposes there are two broods, one in July and the other in October. Jacumba is in the desert part of the county.

On May 30, 1908, I took seventeen specimens of *Callicista ines* near Black Mountain on the desert slope of the Santa Rosa mountains, flying around the small, scrubby Western Juniper (*Juniperus occidentalis*, Hooker).

The Santa Rosa mountains are really a continuation of the San Jacinto moun-